

E Pur Si Muove

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97

I review with mixed feelings my writings of three years ago and the reactions they have generated. I will reply first to some technical points; then I will add a few comments on the basic differences of philosophy that are involved.

Rimmer suggests that one-per-day growth rings are “perhaps only a coincidence.” Yes, that is conceivable, and each person must exercise his scientific judgment on this point; my own smells a causal connection and tells me that the alternative would be a fantastically remarkable coincidence. “Unless someone has observed a mollusk making a ring each day” is a little too strongly worded to be scientifically realistic. The experiments of Pannella and MacClintock, which I discussed in appendix B, were specifically directed at meeting this objection and have (I feel) at the very least made a good start toward that end.

If an occurrence of 360-370 rings (instead of always precisely 365) were of completely mysterious origin, Rimmer’s objection would be more justified. But there are perfectly reasonable explanations why there ought to be deviations. Unusual thermal conditions ought to produce occasional extra or missing rings *in understandable ways*. There is not just an *arbitrary* “ability to make more than one ring per day” in modern animals; it happens for good external reasons, and for the same reasons there should be variability (quite possibly a comparable amount) in prehistoric animals as well. I find it difficult to imagine “some factor with which we are not familiar” that would increase the average figures by the proper amount. If one postulates, say, frequent severe storms as a disturbing influence causing thirty or forty double-ring formations in a year, that should also increase the variability more than is apparent. Or if the extra rings are to result from something intrinsic in the animal, I can imagine entrained growth mechanisms giving either one or two rings per day, but not 1.1.

Rimmer asks, “How can we be sure that this friction has always acted at a constant rate?” We cannot be sure, of course; but we *can* see whether this hypothesis deserves to be called reasonable — by testing its consequences and by comparing

those of alternative hypotheses. And, as I pointed out at the bottom of page 41 [SPECTRUM, Autumn 1971], this hypothesis is remarkably fruitful. In fact, the rate almost certainly has *not* been strictly constant (see my appendix C); but the point is that the present rate is probably not far from a typical *order-of-magnitude* value. The label on FIGURE 2 should indeed have been "days per month."*

As for "sufficient sampling," it is highly desirable to gather more evidence, and if "counterexamples" occur, fine. Meantime, it is *not* just an idle mathematical game to apply conservative statistical tests of significance to the best of our ability.

I agree in a technical sense that there is no "coercive proof" for an age over 6,000 years. But, then, truly coercive proofs do not exist outside the abstractions of pure mathematics. In even the physical sciences, "persuasive proof" is about as good as we can ever do; so that is all I am attempting to suggest.

98

I must disagree with the claim that "we cannot measure forces that operated in ancient times." The way in which we measure them will not be the convenient (and conceptually transparent) one of bringing them into our laboratory and balancing them directly against known standard forces. Yet any creative physicist could easily rattle off half a dozen ways of inferring the strength of some force that acted long ago (not any and every such force, but certain ones that left long-lived results) in an amazing variety of situations. And I will hold this point against any attempt at distinction between "infer" and "measure," for even the most direct of measurements still involves inference.

I agree on the necessity to avoid premature judgment — as long as it is applied to both sides in the debate. I have tried to suggest that acceptance of traditional interpretations of certain Scriptures without paying attention to physical evidence also constitutes premature judgment. Here, I am agreeing with Reynolds that the crucial question is one of authority. It is probably clear to many readers by now that I am highly skeptical of *any* purported authority that is presented as final, infallible, not subject to searching thought and testing against all other available evidence.

I have frankly grown quite weary of pushing that hoary old dodge, the "doctrine of apparent age," to ever greater lengths. Its credibility for me lies mainly within the area of things that "could hardly have been otherwise" — a full-grown Adam, a newly created oak that is thirty feet tall and never was an acorn. Whether Adam had an umbilicus, or the oak tree rings, would be borderline questions. But for God to measure out carefully just those amounts of various isotopes that would make a certain mineral sample appear to be a billion years old *when this has nothing to do* (so far as I can imagine) *with its essential role* of being a rock, smacks of his conspiring to mislead us. And what kind of warped mind do we attribute to God if we credit him with creating certain shells with 400 ridges,

others with 380, etc., when they could all just as well have had 365? Why do this in a context where our most reasonable interpretation would be that the animals experienced 400 days in a year, if such a year never existed? If anyone can imagine any good purpose in such a plan, I would like to hear it.

To the suggestion that Adventist ministers ought to know better the real pros and cons of various models, I can only add a resounding "Amen!"

Finally, I will agree with Reynolds that "suspended judgment is dangerous," although he and I do not thereby imply the same consequences. In my article I made a strong pitch for suspended judgment. This represented a definite stage in my personal struggle with these problems, and I still think it is an important and valid concept.

But also I have become concerned that suspended judgment not be a cover-up for avoiding a decision whose time has come. It can be a cop-out to say, "The evidence is not all in," if this is an excuse for holding onto a pet idea that the accumulating evidence seems more and more to refute. We will never have *all* the evidence; so we must weigh our caution (suspended judgment) against the need to go ahead with at least a tentative decision when the evidence becomes *sufficient* to support one, even though it is not complete.

Unfortunately, I do not think we have a clear choice "between God's authority and man's interpretation of those [scientific] facts." If we did, we could just choose God's side and count on being right; the suspended judgment would be applied only to the other side and would tend not only to be permanently suspended, but to become a total disinterest in those facts, even an ignorance of them. However, the real choice is between *man's interpretations* of God's authority and of other facts, and I insist that the interpretations are as needful of searching scrutiny on the one side as on the other.

*/ The substitution of the word *year* for *month* was an editorial office inadvertence, not an error by the author. EDITOR.